

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of :  
**Yutaka ONOZAWA,** : **HARD COAT FILM**  
**Toshio SUGIZAKI** :  
**and Satoshi SAKURAI** :  
Serial No. Not Yet Assigned :  
Filed Concurrently Herewith :

Pittsburgh, Pennsylvania

June 27, 2001

**PRELIMINARY AMENDMENT**

**BOX PATENT APPLICATION**  
Commissioner for Patents  
Washington D.C. 20231

Sir:

Prior to initial examination, please amend the above-identified patent application as follows:

**IN THE SPECIFICATION:**

Please amend section headings and amend specification paragraphs as follows. (Pursuant to 37 CFR 1.121, marked-up versions of the amended specification paragraphs are attached.)

On page 1, please delete the first complete paragraph and insert the following replacement paragraph:

The present invention relates to a novel hard coat film, more particularly a hard coat film having excellent resistance to impact and weather, and suitable for being stuck on external surfaces, in particular those of window panes and plastic boards for windows.

**On page 1, please delete the second complete paragraph and insert the following replacement paragraph:**

It is known to apply plastic films on window panes and plastic boards for windows for various purposes. For example, sunlight entering a room through a window pane contains ultraviolet and infrared rays, in addition to visible rays. The ultraviolet rays in sunlight causes sunburn. Its adverse effects on a human body have been recently pointed out, and it is well known that it deteriorates a packing material and content thereof. The infrared rays in sunlight, on the other hand, increase temperature in a room by direct sunlight, lowering an air-conditioning effect in summer. In order to avoid these undesirable effects, window panes and plastic boards for windows are covered with an ultraviolet- or infrared-shielding film. They are also frequently covered with a film for view-obstructing purposes, or for preventing fragment scattering when the window pane is broken by a hazard, e.g., earthquake. The above films for shielding ultraviolet or infrared rays, or for view obstruction also have an effect of preventing fragment scattering.

**On page 2, please delete the first complete paragraph and insert the following replacement paragraph:**

More recently, use of the above-described plastic films has been studied, to protect window panes of vehicles running at a high speed. For example, a train generates a high wind pressure when it is passing through a tunnel, thus blowing off pebbles and snow blocks which may directly attack the train's window panes. The plastic film for preventing

**On page 4, delete the first complete paragraph and insert the following replacement paragraph:**

**On page 4, before the second complete paragraph, amend the section heading "Summary of the Invention" to read as follows:**

**On page 5, please delete the second and third complete paragraphs and insert the following replacement paragraphs:**

The hard coat film of the present invention, having the above-mentioned unique structure, is resistant to impact and weather, high in surface hardness, and in particular suitable for application on external surfaces of window panes or plastic boards for windows.

## DETAILED DESCRIPTION OF THE INVENTION

**On page 6, please delete the second complete paragraph and insert the following replacement paragraph:**

The present invention will be described in detail below.

**On page 6, please delete the fourth complete paragraph and insert the following replacement paragraph:**

The multi-layered base for the present invention may be a laminated film of the same resin films or different resin films. The number of these films is not limited, so long as two or more films are used.

**On page 19, before the first complete paragraph, please delete the section heading "EFFECT OF THE INVENTION"**

**On page 19, please delete the first complete paragraph and insert the following replacement paragraph:**

It will, thus, be understood that the hard coat film of the present invention, having the above-mentioned unique structure, is resistant to impact and weather, high in surface hardness, and in particular suitable for being stuck on the external surfaces, e.g., those of window panes or plastic boards for windows.

**On page 22, please delete the first and second complete paragraphs and insert the following replacement paragraphs:**

The polyethylene terephthalate film surface of Material 2 was provided with an 8  $\mu\text{m}$  thick acrylic-based adhesive layer, on which the 50  $\mu\text{m}$  thick polyethylene terephthalate film (the same as that described above) was attached in the same manner, to prepare the laminated film. This laminated film is referred to as Material 3.

The same procedure was repeated to form an 8  $\mu\text{m}$  thick acrylic-based adhesive layer, on which the 50  $\mu\text{m}$  thick polyethylene terephthalate film (the same as that described

above) was put in the same manner, to prepare the laminated film. This laminated film is referred to as Material 4.

**IN THE CLAIMS:**

**Please cancel the previous versions of claims 6, 7, 9, and 10 and insert the amended versions of claims 6, 7, 9, and 10 as follows: (Pursuant to 37 CFR 1.121, marked-up versions of these claims are attached.)**

6. (Amended) The hard coat film according to Claim 4, wherein said weather-resistant resin film contains an ultraviolet absorber.

7. (Amended) The hard coat film according to Claim 4, wherein said weather-resistant resin film is made of polycarbonate or polymethyl methacrylate.

9. (Amended) The hard coat film according to Claim 1, wherein a releasing sheet is provided via an adhesive layer on a side made of said multi-layered base opposite to a side provided with said silicone-based hard coat layer.

10. (Amended) The hard coat film according to Claim 1 for application on external surfaces of window panes or plastic boards for windows.

Please add claims 11-28 as follows:

11. The hard coat film according to Claim 5, wherein said weather-resistant resin film contains an ultraviolet absorber.

12. The hard coat film according to Claim 5, wherein said weather-resistant resin film is made of polycarbonate or polymethyl methacrylate.

13. The hard coat film according to Claim 2, wherein a releasing sheet is provided via an adhesive layer on a side made of said multi-layered base opposite to a side provided with said silicone-based hard coat layer.

14. The hard coat film according to Claim 3, wherein a releasing sheet is provided via an adhesive layer on a side made of said multi-layered base opposite to a side provided with said silicone-based hard coat layer.

15. The hard coat film according to Claim 4, wherein a releasing sheet is provided via an adhesive layer on a side made of said multi-layered base opposite to a side provided with said silicone-based hard coat layer.

16. The hard coat film according to Claim 5, wherein a releasing sheet is provided via an adhesive layer on a side made of said multi-layered base opposite to a side provided with said silicone-based hard coat layer.

17. The hard coat film according to Claim 6, wherein a releasing sheet is provided via an adhesive layer on a side made of said multi-layered base opposite to a side provided with said silicone-based hard coat layer.

18. The hard coat film according to Claim 7, wherein a releasing sheet is provided via an adhesive layer on a side made of said multi-layered base opposite to a side provided with said silicone-based hard coat layer.

19. The hard coat film according to Claim 8, wherein a releasing sheet is provided via an adhesive layer on a side made of said multi-layered base opposite to a side provided with said silicone-based hard coat layer.

20. The hard coat film according to Claim 9, wherein a releasing sheet is provided via an adhesive layer on a side made of said multi-layered base opposite to a side provided with said silicone-based hard coat layer.

21. The hard coat film according to Claim 2 for application on external surfaces of window panes or plastic boards for windows.

22. The hard coat film according to Claim 3 for application on external surfaces of window panes or plastic boards for windows.

23. The hard coat film according to Claim 4 for application on external surfaces of window panes or plastic boards for windows.

24. The hard coat film according to Claim 5 for application on external surfaces of window panes or plastic boards for windows.

25. The hard coat film according to Claim 6 for application on external surfaces of window panes or plastic boards for windows.

26. The hard coat film according to Claim 7 for application on external surfaces of window panes or plastic boards for windows.

27. The hard coat film according to Claim 8 for application on external surfaces of window panes or plastic boards for windows.

28. The hard coat film according to Claim 9 for application on external surfaces of window panes or plastic boards for windows.

Patent No. 1,463,660



**IN THE ABSTRACT:**

**Please delete the ABSTRACT and insert the following replacement  
ABSTRACT:**

A hard coat film is provided, having excellent resistance to impact and weather, and high surface hardness, which is suitable for being stuck on the external surfaces, e.g., those of window panes or plastic boards for windows. In the hard coat film, a silicone-based hard coat layer is provided on one side of a multi-layered base composed of a plurality of the same or different laminated resin films.

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**REMARKS**

Amendments have been made to the specification in order to place the application in conformance with standard United States Patent practice.

Claims 6, 7, 9 and 10 have been amended to eliminate the multiple dependencies and to conform the claims to standard United States patent practice. New claims 11-28 have been added to further define the invention.

Examination and allowance of pending claims 1-28 are respectfully requested.

Respectfully submitted,

WEBB ZIESENHEIM LOGSDON  
ORKIN & HANSON, P.C.

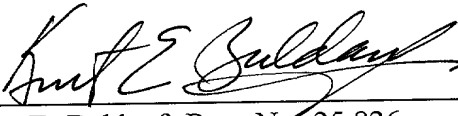
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Figure 1 consists of 12 bar charts, labeled (a) through (l), arranged in a 4x3 grid. Each chart displays the percentage of total protein in various fractions (A, B, C, D, E, F, G, H, I, J, K, L) for different protein types (A, B, C, D, E, F, G, H, I, J, K, L) across different conditions (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12). The charts are arranged in a grid, with each chart having its own set of axes and labels. The y-axis for all charts represents the percentage of total protein, ranging from 0 to 100. The x-axis for each chart represents the different conditions. The data is presented in a way that allows for comparison between protein types and conditions across the different fractions.

6. (Amended) The hard coat film according to Claim 4 [or 5], wherein said

7. (Amended) The hard coat film according to Claim 4 [or 5], wherein said

9. (Amended) The hard coat film according to [any one of Claims 1 to 8]

10. (Amended) The hard coat film according to [any one of Claims 1 to 9

## MARKED-UP AMENDED SPECIFICATION HEADINGS AND PARAGRAPHS

### Page 1, first complete paragraph

The present invention relates to a novel hard coat film, more particularly a hard coat film having excellent [in] resistance to impact and weather, and suitable for being stuck on external surfaces, in particular those of window panes and plastic boards for windows.

### Page 1, second complete paragraph

It is known to apply plastic [Plastic] films [have been used to be stuck] on window panes and plastic boards for windows for various purposes. For example, sunlight entering a room through a window pane contains ultraviolet and infrared rays, in addition to visible [ray] rays. The ultraviolet [ray] rays in sunlight causes sunburn. Its adverse effects on a human body have been recently pointed out, and it is well known that it deteriorates a packing material and content thereof. The infrared [ray] rays in sunlight, on the other hand, [increases] increase temperature in a room by direct sunlight, lowering an air-conditioning effect in summer. In order to avoid these undesirable effects, window panes and plastic boards for windows are covered with an ultraviolet- or infrared-shielding film. They are also frequently covered with a film for view-obstructing purposes, or for preventing fragment scattering when the window pane is broken by a hazard, e.g., earthquake. The above films for shielding ultraviolet or infrared [ray] rays, or for view obstruction also have an effect of preventing fragment scattering.

### Page 2, first complete paragraph

More recently, use of the above-described plastic films has been studied, to protect window panes of vehicles running at a high speed. For example, a train generates a high wind pressure when it is passing through a tunnel, thus blowing off pebbles and snow blocks which may directly attack the train's window panes. The plastic film for preventing the above

troubles is especially required to be highly [resistance] resistant to impact, and also to be highly resistant to weather because it is put in service continuously under severe conditions.

**Page 4, first complete paragraph**

[It is an object of] In order to solve the above problems, the present invention [to provide] provides a preferably transparent hard coat film having excellent [in] resistance to impact and weather[, and high [in] surface hardness, [and in particular] which is particularly suitable for [being stuck] application, as by sticking on [the] external surfaces, [e.g., those of] such as, for example, on window panes or plastic boards for windows[, in order to solve the above problems].

**Page 4, second section heading**

[Summary of the Invention]                      SUMMARY OF THE INVENTION

**Page 5, second and third complete paragraphs**

The hard coat film of the present invention is suitably used [for being stuck] by sticking the hard coat film on the external surfaces, e.g., those of window panes and plastic boards for windows.

The hard coat film of the present invention, having the above-mentioned unique structure, is resistant to impact and weather, high in surface hardness, and in particular suitable for [being stuck] application on [the] external surfaces[, e.g., those] of window panes or plastic boards for windows.

**Page 6, first section heading**

[DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS]

DETAILED DESCRIPTION OF THE INVENTION

**Page 6, second complete paragraph**

The present invention will be described [more concretely] in detail below.

Figure 1 consists of 12 sub-graphs labeled (a) through (l), each showing the growth of *E. coli* O157:H7 in ground beef under different conditions. The y-axis for all graphs is  $\log_{10}$  CFU/g, ranging from 0 to 12. The x-axis is time in hours, ranging from 0 to 120. The graphs show various growth curves, including control, different temperatures, and different treatments.

- (a) Control: Shows a steady increase in CFU/g over time, reaching approximately 11.5 at 120 hours.
- (b) 4°C: Shows a very slow increase in CFU/g, reaching approximately 1.5 at 120 hours.
- (c) 10°C: Shows a slow increase in CFU/g, reaching approximately 3.5 at 120 hours.
- (d) 16°C: Shows a moderate increase in CFU/g, reaching approximately 6.5 at 120 hours.
- (e) 22°C: Shows a rapid increase in CFU/g, reaching approximately 11.5 at 120 hours.
- (f) 28°C: Shows a very rapid increase in CFU/g, reaching approximately 11.5 at 120 hours.
- (g) 34°C: Shows a very rapid increase in CFU/g, reaching approximately 11.5 at 120 hours.
- (h) 40°C: Shows a very rapid increase in CFU/g, reaching approximately 11.5 at 120 hours.
- (i) 46°C: Shows a very rapid increase in CFU/g, reaching approximately 11.5 at 120 hours.
- (j) 52°C: Shows a very rapid increase in CFU/g, reaching approximately 11.5 at 120 hours.
- (k) 58°C: Shows a very rapid increase in CFU/g, reaching approximately 11.5 at 120 hours.
- (l) 64°C: Shows a very rapid increase in CFU/g, reaching approximately 11.5 at 120 hours.

**Page 19, first complete paragraph**

**Page 22, first and second complete paragraphs**

The same procedure was repeated to form [a] an 8  $\mu\text{m}$  thick acrylic-based adhesive layer, on which the 50  $\mu\text{m}$  thick polyethylene terephthalate film (the same as that described above) was put in the same manner, to prepare the laminated film. This laminated film is referred to as Material 4.

Parameter	Value	Unit
Initial temperature	25.0	°C
Final temperature	25.0	°C
Initial pressure	1.0	atm
Final pressure	1.0	atm
Initial volume	1.0	L
Final volume	1.0	L
Initial mass	1.0	g
Final mass	1.0	g
Initial concentration	1.0	mol/L
Final concentration	1.0	mol/L
Initial density	1.0	g/cm <sup>3</sup>
Final density	1.0	g/cm <sup>3</sup>
Initial viscosity	1.0	Pa·s
Final viscosity	1.0	Pa·s
Initial surface tension	1.0	N/m
Final surface tension	1.0	N/m
Initial refractive index	1.0	-
Final refractive index	1.0	-
Initial permittivity	1.0	-
Final permittivity	1.0	-
Initial permeability	1.0	-
Final permeability	1.0	-
Initial conductivity	1.0	S/m
Final conductivity	1.0	S/m
Initial resistivity	1.0	Ω·m
Final resistivity	1.0	Ω·m
Initial thermal conductivity	1.0	W/m·K
Final thermal conductivity	1.0	W/m·K
Initial thermal expansion coefficient	1.0	1/K
Final thermal expansion coefficient	1.0	1/K
Initial compressibility	1.0	1/Pa
Final compressibility	1.0	1/Pa
Initial speed of sound	1.0	m/s
Final speed of sound	1.0	m/s
Initial diffusion coefficient	1.0	m <sup>2</sup> /s
Final diffusion coefficient	1.0	m <sup>2</sup> /s
Initial thermal diffusivity	1.0	m <sup>2</sup> /s
Final thermal diffusivity	1.0	m <sup>2</sup> /s
Initial mass diffusivity	1.0	m <sup>2</sup> /s
Final mass diffusivity	1.0	m <sup>2</sup> /s
Initial kinematic viscosity	1.0	m <sup>2</sup> /s
Final kinematic viscosity	1.0	m <sup>2</sup> /s
Initial dynamic viscosity	1.0	Pa·s
Final dynamic viscosity	1.0	Pa·s
Initial surface energy	1.0	J/m <sup>2</sup>
Final surface energy	1.0	J/m <sup>2</sup>
Initial interfacial energy	1.0	J/m <sup>2</sup>
Final interfacial energy	1.0	J/m <sup>2</sup>
Initial contact angle	1.0	°
Final contact angle	1.0	°
Initial wetting time	1.0	s
Final wetting time	1.0	s
Initial spreading time	1.0	s
Final spreading time	1.0	s
Initial contact time	1.0	s
Final contact time	1.0	s
Initial contact radius	1.0	m
Final contact radius	1.0	m
Initial contact area	1.0	m <sup>2</sup>
Final contact area	1.0	m <sup>2</sup>
Initial contact volume	1.0	m <sup>3</sup>
Final contact volume	1.0	m <sup>3</sup>
Initial contact height	1.0	m
Final contact height	1.0	m
Initial contact width	1.0	m
Final contact width	1.0	m
Initial contact length	1.0	m
Final contact length	1.0	m
Initial contact depth	1.0	m
Final contact depth	1.0	m
Initial contact thickness	1.0	m
Final contact thickness	1.0	m
Initial contact width	1.0	m
Final contact width	1.0	m
Initial contact length	1.0	m
Final contact length	1.0	m
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Initial contact depth		